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EXAMINER	
BELL, MELTIN	

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/754,179	NELKEN ET AL.	
	Examiner	Art Unit	
	Meltin Bell	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 October 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-82* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 February 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This non-final action is responsive to application **09/754,179** filed 1/3/2001 as well as the Appeal Brief filed 10/8/2004. Claims 1-82 filed by the applicant have been entered and examined. An action on the merits of claims 1-82 appears below. Prosecution on the merits is reopened.

Priority

Applicant's claim for domestic priority against application number 60/176,411 filed **1/13/2000** under 35 U.S.C. 119(e) is acknowledged.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Claims 41 and 55 stand rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter. The language of the claims (e.g. "communication", "intent", "response", "predictions") raise a question as to whether the claims are directed merely to an abstract idea that is not tied to a technological art, environment or machine which would result in a practical application producing a concrete, useful, and tangible result to form the basis of statutory subject matter under 35 U.S.C. 101. For example, if claim 41 was amended to recite a computer-

implemented method and required performance of a result outside of a computer, it will be statutory in most cases since use of technology permits the function of the descriptive material to be realized.

Claim Rejections - 35 USC § 112

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claim 82 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the determined category, page 24, lines 2-4 of the specification do not reasonably provide enablement for an actual category. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. M.N. 2/2/05

The breadth of claim 82 determined by the transitional phrase comprising allows for an open interpretation of actual category. Though category is well-known in the art and disclosed in the specification on page 11, lines 10-12, lines 20-23, page 12, lines 1-

4, page 17, lines 19-20, page 20, lines 14-15, page 24, lines 2-13 and page 25, lines 1-7, the context for actual within the specification is not related to category: actual response feedback on page 4, lines 14-21, actual texts on page 13, lines 14-16, actual models on page 16, lines 9-10, actual system result/action on page 17, lines 4-6 and actual system performance on page 18, lines 12-14. The nature of the invention in regards to an actual category is not clear. *Masand et al* USPN 5,251,131 "Method and means for grammatically processing a natural language sentence" (Oct. 5, 1993) and *Kudo et al* USPN 5,948,058 "Method and apparatus for cataloging and displaying e-mail using a classification rule preparing means and providing cataloging a piece of e-mail into multiple categories or classification types based on e-mail object information" (Sep. 7, 1999) are more explicit in their representation of the state of the art: *Masand et al* column 30, lines 40-58 suggests an actual category in describing the implementation of structures, such as TDB 80, in Fig. 7C while *Kudo et al* column 29, lines 22-35 presents actual category in the context of a user selecting a classification condition resulting in a change to an electronic mail's classification category. Consequently, the specification's lack of working examples, amount of direction provided, quantity of experimentation needed to make or use the invention and diversity within the art for implementing actual category functionality make the disclosure not enabling for one of ordinary skill in the art given the art's level of predictability.

Claim Rejections - 35 USC § 103

To expedite a complete examination of the instant application, the claims rejected under 35 U.S.C. 101 (nonstatutory) above are further rejected as set forth below in anticipation of applicant amending these claims to place them within the four statutory categories of invention.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the Office presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the Office to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-6, 8-14, 24-30, 32-33, 35, 39 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* USPN 6,138,139 "Method and apparatus for supporting

diverse interaction paths within a multimedia communication center" (Filed October 29, 1998) in view of *Register et al* USPN 5,371,807 "Method and apparatus for text classification" (Dec. 6, 1994).

Regarding claim 1:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)
- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)
- an adaptive knowledge base configured to store models (column 8, lines 5-11)
- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*,

column 2, lines 10-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* for the purpose of improving accuracy/performance.

Regarding claim 2:

The rejection of claim 2 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 2's limitations difference is taught in *Beck et al*:

- the contact center is configured to send and receive communications via text-based (column 8, lines 45-65) communication channels (column 2, lines 50-54)

Regarding claim 3:

The rejection of claim 3 is the same as that for claims 2 and 1 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 4:

The rejection of claim 4 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 4's limitations difference is taught in *Register et al*:

- the contact center is configured to receive text communications containing natural language (Abstract)

Regarding claim 5:

The rejection of claim 5 is similar to that for claim 4 as recited above since the stated limitations of the claim are set forth in the references. Claim 5's limitations difference is taught in *Register et al*:

- the modeling engine includes a natural language processor (Fig. 1, item 12) configured to analyze the text communications to identify concepts (column 1, lines 50-60)

Regarding claim 6:

The rejection of claim 6 is the same as that for claim 5 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 8:

The rejection of claim 8 is similar to that for claim 5 as recited above since the stated limitations of the claim are set forth in the references. Claim 8's limitations difference is taught in *Register et al*:

- the natural language processor includes a lexical knowledge base (Fig. 3, items 20, 52)

Regarding claim 9:

The rejection of claim 9 is the same as that for claim 1 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 10:

The rejection of claim 10 is the same as that for claim 1 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 11:

The rejection of claim 11 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 11's limitations difference is taught in *Beck et al*:

- the contact center converts received communications into a universal data model format (column 33, lines 1-23)

Regarding claim 12:

The rejection of claim 12 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 12's limitations difference is taught in *Beck et al*:

- an audit (column 10, lines 24-33) module that monitors (Abstract) responses generated by agents for quality (column 2, lines 56-67)

Regarding claim 13:

The rejection of claim 13 is the same as that for claim 12 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 14:

The rejection of claim 14 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 14's limitations difference is taught in *Register et al*:

- each of the models in the adaptive knowledge base includes an accuracy gauge that is updated by feedback (column 11, lines 54-68; column 12, lines 1-24)

Regarding claim 24:

The rejection of claim 24 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 24's limitations difference is taught in *Beck et al*:

- the modeling engine automatically retrieves data based on the intent of the received communication (column 31, lines 56-67; column 32, lines 1-5)

Regarding claim 25:

The rejection of claim 25 is similar to that for claim 24 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 26:

The rejection of claim 26 is similar to that for claim 24 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 27:

The rejection of claim 27 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 27's limitations difference is taught in *Register et al*:

- the modeling engine supports an application specific module (column 12, lines 25-35)

Regarding claim 28:

The rejection of claim 28 is the same as that for claim 27 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claims 29:

The rejection of claim 29 is the same as that for claim 27 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 30:

The rejection of claim 30 is similar to that for claim 27 as recited above since the stated limitations of the claim are set forth in the references. Claim 30's limitations difference is taught in *Register et al*:

- the application specific module is an automatic (column 10, lines 34-48) task prioritization (column 41, lines 1-20) module (column 24, lines 37-67; column 25, lines 1-8)

Regarding claim 32:

The rejection of claim 32 is similar to that for claim 27 as recited above since the stated limitations of the claim are set forth in the references. Claim 32's limitations difference is taught in *Beck et al*:

- the application specific module is a business process automation module (column 32, lines 28-45)

Regarding claim 33:

The rejection of claim 33 is similar to that for claim 27 as recited above since the stated limitations of the claim are set forth in the references. Claim 33's limitations difference is taught in *Beck et al*:

- the application specific module is a workflow application (column 11, lines 40-51)

Regarding claim 35:

The rejection of claim 35 is similar to that for claim 27 as recited above since the stated limitations of the claim are set forth in the references. Claim 35's limitations difference is taught in *Register et al*:

- the application specific module generally classifies the received communications according to content (column 1, lines 19-37)

Regarding claim 39:

The rejection of claim 39 is similar to that for claim 1 as recited above since the stated limitations of the claim are set forth in the references. Claim 39's limitations difference is taught in *Beck et al*:

- the received communications include documents (column 20, lines 34-50)

Claim 7 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Tokuume et al* USPN 5,101,349 "Natural language processing system" (Mar. 31, 1992).

Regarding claim 7:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the natural language processor performs a semantic analysis of the text communications while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)
- the contact center is configured to receive text communications containing natural language (Abstract)
- the modeling engine includes a natural language processor (Fig. 1, item 12) configured to analyze the text communications to identify concepts (column 1, lines 50-60)

Tokuume et al teaches,

- the natural language processor performs a semantic analysis of the text communications (column 1, lines 55-68)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and analyzing the input sentence (*Tokuume et al*, column 6, lines 16-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Tokuume et al* for the purpose of improving accuracy/performance as well as analyzing the input sentence.

Claim 15 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Parmentier et al* "Logical structure recognition of scientific bibliographic references" (18-20 Aug. 1997).

Regarding claim 15:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)
- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)
- an adaptive knowledge base configured to store models (column 8, lines 5-11)
- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the adaptive knowledge base includes models for active concepts and models for inactive concepts while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

- each of the models in the adaptive knowledge base includes an accuracy gauge that is updated by feedback (column 11, lines 54-68; column 12, lines 1-24)

Parmentier et al teaches,

- the adaptive knowledge base includes models for active concepts and models for inactive concepts (page 1075, left column, last paragraph)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and making the system more robust (*Parmentier et al*, Abstract; page 1076, right column, paragraph 1). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Parmentier et al* for the purpose of improving accuracy/performance as well as making the system more robust.

Claims 16-17 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* in view of *Parmentier et al* and in further view of *Higgins et al* USPN 5,754,671 "Method for improving cursive address recognition in mail pieces using adaptive data base management" (May 19, 1998).

Regarding claim 16:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base, the adaptive knowledge base includes models for active concepts and models for inactive concepts or the models for active concepts become inactive when they have a sufficiently low accuracy rating while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

- each of the models in the adaptive knowledge base includes an accuracy gauge that is updated by feedback (column 11, lines 54-68; column 12, lines 1-24)

Parmentier et al teaches,

- the adaptive knowledge base includes models for active concepts and models for inactive concepts (page 1075, left column, last paragraph)

Higgins et al teaches,

- the models for active concepts become inactive when they have a sufficiently low accuracy rating (column 12, lines 22-34)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13), making the system more robust (*Parmentier et al*, Abstract; page 1076, right column, paragraph 1) and increasing the speed of cursive word recognition (*Higgins et al*, column 12, lines 3-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al, Parmentier et al* and *Higgins et al* for the purpose of improving accuracy/performance as well as making the system more robust and increasing speed.

Regarding claim 17:

The rejection of claim 17 is the same as that for claims 15 and 16 as recited above since the stated limitations of the claim are set forth in the references.

Claims 18-22 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Liddy et al* USPN 6,006,221 "Multilingual document retrieval system and method using semantic vector matching" (Dec. 21, 1999).

Regarding claim 18:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the models in the adaptive knowledge base are organized into categories and the categories are associated with branches while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Liddy et al teaches,

- the models (column 16, lines 42-62) in the adaptive knowledge base are organized into categories and the categories are associated with branches (Fig. 7; column 9, lines 48-58)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and generating a language-independent conceptual representation of the subject content of a document and query (*Liddy et al*, Abstract). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Liddy et al* for the purpose of improving accuracy/performance as well as generating a language-independent conceptual representation of the subject content of a document/query.

Regarding claim 19:

The rejection of claim 19 is similar to that for claim 18 as recited above since the stated limitations of the claim are set forth in the references. Claim 19's limitations difference is taught in *Liddy et al*:

- the modeling engine modifies the branches in the adaptive knowledge base using the feedback from the feedback module (Fig. 7; column 20, lines 16-45)

Regarding claim 20:

The rejection of claim 20 is similar to that for claim 18 as recited above since the stated limitations of the claim are set forth in the references. Claim 20's limitations difference is taught in *Liddy et al*:

- hierarchies of the branches in the adaptive knowledge base are created manually (column 13, lines 3-27)

Regarding claim 21:

The rejection of claim 21 is the same as that for claims 18 and 20 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 22:

The rejection of claim 22 is similar to that for claim 18 as recited above since the stated limitations of the claim are set forth in the references. Claim 22's limitations difference is taught in *Liddy et al*:

- the branches in the adaptive knowledge base have associated rules (column 17, lines 23-54)

Claims 23 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Kohn et al* USPN 5,963,447 "Multiple-agent hybrid control architecture for intelligent real-time control of distributed nonlinear processes" (Oct. 5, 1999).

Regarding claim 23:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

- the modeling engine includes a statistical modeler that creates the models (column 24, lines 11-26) and performs relationship modeling (column 27, lines 3-14)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the modeling engine includes a statistical modeler that creates the models and performs relationship algebra using the models while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Kohn et al teaches,

- the modeling engine includes a statistical (column 13, lines 3-13) modeler that creates the models and performs relationship algebra (column 31, lines 23-31) using the models (column 35, lines 36-53)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and generating control automata that achieve near-optimal performance in spite of certain system nonlinearities, disturbances, uncertainties and changes over time (*Kohn et al*, column 4, line 62-67; column 5, lines 1-3). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was

made, to modify *Beck et al* as taught by *Register et al* and *Kohn et al* for the purpose of improving accuracy/performance as well as generating control automata that achieve near-optimal performance in spite of certain system nonlinearities, disturbances, uncertainties and changes.

Claims 31 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Bowman-Amuah* USPN 6,256,773 "System, method and article of manufacture for configuration management in a development architecture framework" (Filed Aug. 31, 1999).

Regarding claim 31:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)
- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)
- an adaptive knowledge base configured to store models (column 8, lines 5-11)
- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine,

which uses the feedback to update the models in the adaptive knowledge base or the application specific module is a content filter module that filters content of agent-generated responses while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Bowman-Amuah teaches,

- the application specific module is a content filter (column 48, lines 50-52) module that filters content of agent-generated (column 108, lines 47-60) responses (column 76, lines 14-18 and 42-44; column 25, lines 1-8)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and improving an organization's responsiveness (*Bowman-Amuah*, column 110, lines 25-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Bowman-Amuah* for the purpose of improving accuracy/performance as well as organizational responsiveness.

Claims 34, 36-37, 55 and 59 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Bennett et al* USPN 6,615,172 "Intelligent query engine for processing voice based queries" (Filed Nov. 12, 1999).

Regarding claim 34:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the application specific module is a Frequently Asked Questions module while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Bennett et al teaches,

- the application specific module (column 6, lines 61-66) is a Frequently Asked Questions module (column 8, lines 36-50)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Bennett et al* for the purpose of improving accuracy/performance as well as speed and uniformity of response to queries.

Regarding claim 36:

The rejection of claim 36 is similar to that for claims 2 and 34 as recited above since the stated limitations of the claim are set forth in the references. Claim 36's limitations difference is taught in *Bennett et al*:

- a digital signal processing module configured to process received voice communications (column 19, lines 63-67; column 20, lines 1-18)

Regarding claim 37:

The rejection of claim 37 is similar to that for claim 36 as recited above since the stated limitations of the claim are set forth in the references. Claim 37's limitations difference is taught in *Bennett et al*:

- the digital signal processing module categorizes the received voice communications (column 17, lines 48-67) according to acoustical content (column 15, lines 6-52) of the received voice communications

Regarding claim 55:

Beck et al teaches,

- receiving the relationship event (column 21, lines 42-61) over the computer network (column 7, lines 17-36)

- analyzing the relationship event at a computer attached to the computer network (Figs. 1, 7, 8)

- routing (column 17, lines 1-4) the relationship event for action based on the category (column 11, lines 40-58) scores (column 14, lines 59-67; column 15, lines 1-4)

However, *Beck et al* doesn't explicitly teach analyzing the relationship event at a computer attached to the computer network to identify concepts in the relationship event, building an event model of the relationship event using the concepts or mapping the event model to models in a knowledge base to produce category scores while *Register et al* teaches,

- mapping (column 1, lines 50-60) the event (column 12, lines 66-68; column 13, lines 1-19) in a knowledge base to produce category scores (column 11, lines 9-20)

Bennett et al teaches,

- analyzing (column 11, lines 23-27) the relationship (column 8, lines 36-50) event (column 21, lines 7-11) at a computer attached to the computer network (Figs. 1, 10; column 7, lines 9-33) to identify concepts (column 33, lines 12-25) in the relationship event

- building an event model (column 20, lines 50-53) of the relationship event using the concepts (column 15, lines 6-52)

- mapping (column 18, lines 24-29) the event model to models (column 17, lines 5-26) in a knowledge base (column 11, lines 59-67; column 12, lines 1-10) to produce category scores (column 25, lines 16-44)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Bennett et al* for the purpose of improving accuracy/performance as well as speed and uniformity of response to queries.

Regarding claim 59:

Beck et al teaches,

- receiving the relationship event (column 21, lines 42-61; column 7, lines 17-36)
- routing (column 17, lines 1-4) the relationship event for action based on the category (column 11, lines 40-58) scores (column 14, lines 59-67; column 15, lines 1-4)

However, *Beck et al* doesn't explicitly teach analyzing the relationship event to identify concepts in the relationship event, building an event model of the relationship event using the concepts or mapping the event model to models in a knowledge base to produce category scores while *Register et al* teaches,

- mapping (column 1, lines 50-60) the event (column 12, lines 66-68; column 13, lines 1-19) in a knowledge base to produce category scores (column 11, lines 9-20)

Bennett et al teaches,

- analyzing (column 11, lines 23-27) the relationship (column 8, lines 36-50) event (column 21, lines 7-11) at a computer attached to the computer network (Figs. 1, 10; column 7, lines 9-33) to identify concepts (column 33, lines 12-25) in the relationship event

- building an event model (column 20, lines 50-53) of the relationship event using the concepts (column 15, lines 6-52)

- mapping (column 18, lines 24-29) the event model to models (column 17, lines 5-26) in a knowledge base (column 11, lines 59-67; column 12, lines 1-10) to produce category scores (column 25, lines 16-44)

Motivation – The portions of the claimed computer-readable medium would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Bennett et al* for the purpose of improving accuracy/performance as well as speed and uniformity of response to queries.

Claims 38 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Kalogeraki et al* "Using multiple feedback

loops for object profiling, scheduling and migration in soft real-time distributed object systems" (2-5 May 1999).

Regarding claim 38:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)
- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)
- an adaptive knowledge base configured to store models (column 8, lines 5-11)
- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or the feedback module is further configured to support multiple feedbacks to a single received communication while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Kalogeraki et al teaches,

- the feedback module is further configured to support multiple feedbacks to a single received communication (page 295, Fig. 5; page 297, section 6, paragraph 1)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and migrating objects when necessary to maintain uniform load on the processors and increase reliability (*Kalogeraki et al*, page 292, left column, paragraphs 1-2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Kalogeraki et al* for the purpose of improving accuracy/performance as well as increasing reliability.

Claims 40 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Register et al* and in further view of *Higgins et al*.

Regarding claim 40:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)
- a modeling engine (column 38, lines 1-9) configured to analyze a communication received by the contact center and determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26) of the received communication (column 32, lines 55-67)
- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a module configured to analyze a response to the received communications and update the models in the adaptive knowledge base (column 37, lines 15-43)

However, *Beck et al* doesn't explicitly teach a feedback module configured to analyze a response to the received communications and provide feedback to the modeling engine, which uses the feedback to update the models in the adaptive knowledge base or a statistical matching value between the documents and the models is evaluated by a calculated statistical likelihood value while *Register et al* teaches,

- a feedback module configured to analyze a response to the received communications and provide feedback to update the adaptive knowledge base (column 3, lines 37-52)

Higgins et al teaches,

- a statistical matching value between the documents (column 3, lines 45-52) and the models (column 5, lines 38-59) is evaluated by a calculated statistical likelihood value (column 11, lines 53-67; column 12, lines 1-3)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for improving accuracy and performance over time (*Register et al*, column 2, lines 10-13) and increasing the speed of cursive word recognition (*Higgins et al*, column 12, lines 3-7). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Register et al* and *Higgins et al* for the purpose of improving accuracy/performance as well as increasing speed.

Claims 41, 43-47, 49, 56 and 60 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* USPN 5,251,131 "Classification of data records by comparison of records to a training database using probability weights" (Oct. 5, 1993).

Regarding claim 41:

Beck et al teaches,

- receiving a communication over the computer network (column 7, lines 17-36)
- analyzing the communication at a computer attached to the computer network (Figs. 1, 7, 8) to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)
- predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)
- preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time

the invention was made, to modify *Beck et al* as taught by *Masand et al* for the purpose of providing more accurate results.

Regarding claim 43:

The rejection of claim 43 is the same as that for claim 41 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 44:

The rejection of claim 44 is similar to that for claim 41 as recited above since the stated limitations of the claim are set forth in the references. Claim 44's limitation difference is taught in *Beck et al*:

- the step of predicting a response to the communication includes comparing the communication (column 15, lines 30-34) to a model (column 13, lines 52-63)

Regarding claims 45:

The rejection of claim 45 is the same as that for claim 41 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 46:

The rejection of claim 46 is the same as that for claim 41 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 47:

The rejection of claim 47 is similar to that for claim 41 as recited above since the stated limitations of the claim are set forth in the references. Claim 47's limitation difference is taught in *Masand et al*:

- the communication is a text communication containing natural language (column 41, lines 10-17)

Regarding claim 49:

The rejection of claim 49 is similar to that for claims 41 and 44 as recited above since the stated limitations of the claim are set forth in the references. Claim 49's limitation difference is taught in *Beck et al*:

- the step of predicting a response to the communication includes comparing the communication to a set of models that corresponds to a category related to the intent (column 14, lines 46-53)

Regarding claim 56:

Beck et al teaches,

receiving a communication (column 7, lines 17-36)

analyzing the communication to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) intent (column 9, lines 25-36; column 31, lines 12-26)

predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)

preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Motivation – The portions of the claimed computer-readable medium would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* for the purpose of providing more accurate results.

Regarding claim 60:

Beck et al teaches,

- means for (Figs. 1, 7, 8) receiving a communication (column 7, lines 17-36)
- means for analyzing the communication to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)
- means for predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)
- means for preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach means for comparing the actual response to the predicted response to improve subsequent predictions while *Masand et al* teaches,

- means for (Figs. 1, 4A) comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Motivation – The portions of the claimed computer-readable medium would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* for the purpose of providing more accurate results.

Claim 42 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* and in further view of *Tokuume et al.*

Regarding claim 42:

Beck et al teaches,

- receiving a communication over the computer network (column 7, lines 17-36)
- analyzing the communication at a computer attached to the computer network (Figs. 1, 7, 8) to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)
- predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)
- preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions or the step of routing the communication based on semantical content of the communication while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Tokuume et al teaches,

- the step of routing the communication based on semantical content of the communication (column 1, lines 55-68)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13) and analyzing the input sentence (*Tokuume et al*, column 6, lines 16-20). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* and *Tokuume et al* for the purpose of providing more accurate results as well as analyzing the input sentence.

Claim 48 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* and in further view of *Kanno et al* USPN 5,099,425 "Method and apparatus for analyzing the semantics and syntax of a sentence or a phrase" (Mar. 24, 1992).

Regarding claim 48:

Beck et al teaches,

- receiving a communication over the computer network (column 7, lines 17-36)

- analyzing the communication at a computer attached to the computer network (Figs. 1, 7, 8) to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)

- predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)

- preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions or the step of analyzing the communication includes morphological analysis and semantic analysis while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

- the communication is a text communication containing natural language (column 41, lines 10-17)

Kanno et al teaches,

- the step of analyzing the communication includes morphological analysis and semantic analysis (column 4, lines 57-68)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for providing more accurate results (*Masand et al*, column 22, lines 6-13) and efficiently analyzing the meaning of a sentence or phrase (*Kanno et al*, column 1, lines 17-32). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* and *Kanno et al* for the purpose of providing more accurate results efficiently .

Claims 50-51 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* and in further view of *Hellerstein et al* USPN 6,430,615 "Predictive model-based measurement acquisition employing a predictive model operating on a manager system and a managed system" (Filed March 13, 1998).

Regarding claim 50:

Beck et al teaches,

- receiving a communication over the computer network (column 7, lines 17-36)
- analyzing the communication at a computer attached to the computer network (Figs. 1, 7, 8) to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)
- predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)
- preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions or the step of comparing the actual response and the predicted response produces feedback that is used to modify a model while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Hellerstein et al teaches,

- the step of comparing the actual response and the predicted response (column 15, lines 61-67; column 16, lines 1-6) produces feedback (column 3, lines 30-46) that is used to modify a model (column 16, lines 7-33)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13) and reducing network traffic (*Hellerstein et al*, column 5, lines 62-67; column 6, lines 1-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* and *Hellerstein et al* for the purpose of providing more accurate results efficiently as well as reducing network traffic.

Regarding claim 51:

The rejection of claim 51 is similar to that for claim 50 as recited above since the stated limitations of the claim are set forth in the references. Claim 51's limitations difference is taught in *Hellerstein et al*:

- if the actual response is substantially the same as the predicted response, the feedback is positive, and if the actual response is substantially different from the predicted response, the feedback is negative (column 4, lines 31-47)

Claims 52-54 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* and in further view of *Bennett et al*.

Regarding claim 52:

Beck et al teaches,

- receiving a communication over the computer network (column 7, lines 17-36)

- analyzing the communication at a computer attached to the computer network (Figs. 1, 7, 8) to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)

- predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)

- preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions or the communication is a voice communication expressed in natural language while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Bennett et al teaches,

- the communication is a voice communication expressed in natural language (column 23, lines 53-67; column 24, lines 1-8)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13) and improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* and *Bennett et al* for the purpose of providing more accurate results as well as improving speed and uniformity of response to queries.

Regarding claim 53:

The rejection of claim 53 is similar to that for claim 52 as recited above since the stated limitations of the claim are set forth in the references. Claim 53's limitations difference is taught in *Bennett et al*:

- the step of analyzing the communication (column 17, lines 48-67) includes digital signal processing (column 19, lines 63-67; column 20, lines 1-18) of the voice communication

Regarding claim 54:

The rejection of claim 54 is similar to that for claim 53 as recited above since the stated limitations of the claim are set forth in the references. Claim 54's limitations difference is taught in *Bennett et al*:

- the step of predicting (column 26, lines 63-67; column 27, lines 1-15) a response to the communication (column 22, lines 58-67; column 23, lines 1-22) includes categorizing (column 33, lines 60-67; column 34, lines 1-18) the voice communication based on acoustical content (column 15, lines 6-52) of the voice communication (Figs. 3, 4D, 5, 8-9)

Claims 57-58 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Masand et al* and in further view of *Bowman-Amuah*.

Regarding claim 57:

Beck et al teaches,

receiving a communication (column 7, lines 17-36)

analyzing the communication to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) intent (column 9, lines 25-36; column 31, lines 12-26)

predicting a response to the communication based on the intent, producing a predicted response (column 10, lines 49-53)

preparing a response to the communication (column 23, lines 39-58), producing an actual response (column 32, lines 28-45)

However, *Beck et al* doesn't explicitly teach comparing the actual response to the predicted response to improve subsequent predictions or the step of comparing the actual response and the predicted response occurs in real time while *Masand et al* teaches,

- comparing the actual (column 3, lines 67-68; column 4, lines 1-16) response to the predicted response (column 6, lines 26-46) to improve subsequent predictions (column 40, lines 63-68; column 41, lines 1-9)

Bowman-Amuah teaches,

- the step of comparing the actual response and the predicted response (column 105, lines 6-11) occurs in real time (column 76, lines 42-44)

Motivation – The portions of the claimed computer-readable medium would have been a highly desirable feature in this art for providing more accurate results (*Masand et al,* column 22, lines 6-13) and improving an organization's responsiveness (*Bowman-Amuah,* column 110, lines 25-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Masand et al* and *Bowman-Amuah* for the purpose of providing more accurate results as well as improving organizational responsiveness.

Regarding claim 58:

The rejection of claim 58 is similar to that for claim 56 and 57 as recited above since the stated limitations of the claim are set forth in the references. Claim 58's limitations difference is taught in *Bowman-Amuah*:

- the step of comparing the actual response and the predicted response occurs off-line (column 76, lines 42-44)

Claims 61-62, 73-77 and 78 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bigus* USPN 5,745,652 "Adaptive resource allocation using neural networks" (Apr. 28, 1998).

Regarding claim 61:

Beck et al teaches,

- a contact center configured(column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36) via communication channels including telephone, facsimile, electronic mail, web forms, chat, and wireless
- a modeling engine (column 38, lines 1-9) configured to analyze a received communication to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 11-36; column 31, lines 12-26), and further configured to retrieve data related to the intent
- an adaptive knowledge base configured to store models (column 8, lines 5-11)

However, *Beck et al* doesn't explicitly teach a feedback module that compares a response predicted by the modeling engine in conjunction with the models in the

adaptive knowledge base and an actual response to the received communication to generate feedback, the feedback being used to update the models in the adaptive knowledge base such that the system learns from each received communication while *Bigus* teaches,

- a feedback module (column 6, lines 17-22) that compares a response (column 3, lines 1-21) predicted by the modeling engine in conjunction with the models in the adaptive knowledge base (column 2, lines 39-42) and an actual response (column 2, lines 39-42) to the received communication to generate feedback (column 11, lines 19-36), the feedback being used to update the models in the adaptive knowledge base such that the system learns (column 9, lines 4-38) from each received communication

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bigus* for the purpose of constructing accurate computer system performance models.

Regarding claim 62:

The rejection of claim 62 is the same as that for claims 61 as recited above since the stated limitations of the claim are set forth in the references. Claim 62's limitations difference is taught in *Beck et al*:

- the modeling engine gains knowledge from communications on one communication channel and applies the knowledge to communications on another communication channel (column 12, lines 9-57)

Regarding claim 73:

Beck et al teaches,

- a contact center configured (column 29, lines 60-67; column 30, lines 1-13) to send and receive communications (column 7, lines 17-36)

- an adaptive knowledge base configured to store models (column 8, lines 5-11)

- a modeling engine(column 38, lines 1-9) configured to analyze a received communication to determine (column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5) an intent (column 9, lines 25-36; column 31, lines 12-26)

However, *Beck et al* doesn't explicitly teach a modeling engine configured to analyze a received communication to determine an intent, to prepare a model of the communication based on the intent, and to compare the model of the communication with the models stored in the adaptive knowledge base to produce a predicted response or a feedback module configured to compare the predicted response with an actual response to the received communication to generate feedback used by the adaptive knowledge base to modify at least one model such that the system learns from the received communication while *Bigus* teaches,

- comparing the model of the communication with the models stored in the adaptive knowledge base (column 2, lines 6-29) to produce a predicted response (column 9, lines 4-38)

- a feedback module (column 6, lines 17-22) configured to compare the predicted response (column 3, lines 1-21) with an actual response (column 2, lines 39-42) to the received communication to generate feedback used by the adaptive knowledge base (column 2, lines 39-42) to modify at least one model (column 11, lines 19-36) such that the system learns from the received communication (column 9, lines 4-38)

Motivation – The portions of the claimed system would have been a highly desirable feature in this art for constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bigus* for the purpose of constructing accurate computer system performance models.

Regarding claim 74:

The rejection of claim 74 is similar to that for claim 73 as recited above since the stated limitations of the claim are set forth in the references. Claim 74's limitations difference is taught in *Beck et al*:

- a human agent produces the actual response to the received communication (column 36, lines 36-60)

Regarding claim 75:

The rejection of claim 75 is the same as that for claim 73 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 76:

The rejection of claim 76 is similar to that for claim 73 as recited above since the stated limitations of the claim are set forth in the references. Claim 76's limitations difference is taught in *Beck et al*:

- the modeling engine is further configured to determine a plurality of intents in the received communication (column 39, lines 6-13; column 42, lines 14-23)

Regarding claim 77:

The rejection of claim 77 is the same as that for claims 73 and 76 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 78:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)

- creating a model of the communication (column 10, lines 34-65) on a computer (Figs. 1, 7, 8)

However, *Beck et al* doesn't explicitly teach comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication while *Bigus* teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) action in response to the communication

- comparing the predicted action with an actual action in response to the communication to produce feedback (column 6, lines 17-22)

- updating the set of adaptive models according to the feedback (Figs. 2, 5A-B)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bigus* for the purpose of constructing accurate computer system performance models.

Claims 63, 65 and 67-72 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bennett et al* and in further view of *Bigus*.

Regarding claim 63:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)
- analyzing content of the communication on a computer (Figs. 1, 7, 8)
- preparing an actual (column 23, lines 39-58) response to the communication

However, *Beck et al* doesn't explicitly teach analyzing content of the communication on a computer to identify at least one concept of the communication while *Bennett et al* teaches,

- analyzing (column 11, lines 23-27) content of the communication on a computer (Figs. 1, 10; column 7, lines 9-33) to identify at least one concept (column 33, lines 12-25) of the communication

- creating a model (column 20, lines 50-53) of the communication using the at least one concept (column 15, lines 6-52)

Bigus teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) response to the communication

- comparing the predicted response and the actual response to produce feedback (column 6, lines 17-22)

- using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication (Figs. 2, 5A-B)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30) and constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bennett et al* and *Bigus* for the purpose of improving accuracy/speed/uniformity of response as well as constructing accurate computer system performance models.

Regarding claim 65:

The rejection of claim 65 is similar to that for claim 63 as recited above since the stated limitations of the claim are set forth in the references. Claim 65's limitations difference is taught in Beck et al:

- the step of using the feedback to modify at least one of the set of adaptive models occurs in real time (column 31, lines 12-26)

Regarding claim 67:

The rejection of claim 67 is the same as that for claims 63 and 66 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 68:

The rejection of claim 68 is similar to that for claim 63 as recited above since the stated limitations of the claim are set forth in the references. Claim 68's limitations difference is taught in *Bennett et al*:

- the content of the communication is expressed in a natural language (Abstract)

Regarding claim 69:

The rejection of claim 69 is similar to that for claims 63 and 68 as recited above since the stated limitations of the claim are set forth in the references. Claim 69's limitations difference is taught in *Beck et al*:

- the content of the communication includes natural language and metadata (column 30, lines 42-54)

Regarding claim 70:

The rejection of claim 70 is similar to that for claim 63 as recited above since the stated limitations of the claim are set forth in the references. Claim 70's limitations difference is taught in *Beck et al*:

- the content of the communication includes natural language and structured information (Abstract)

Regarding claim 71:

The rejection of claim 71 is the same as that for claim 63 as recited above since the stated limitations of the claim are set forth in the references.

Regarding claim 72:

The rejection of claim 72 is the same as that for claim 63 as recited above since the stated limitations of the claim are set forth in the references.

Claims 64 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bennett et al* in view of *Bigus* and in further view of *Bowman-Amuah*.

Regarding claim 64:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)

- analyzing content of the communication on a computer (Figs. 1, 7, 8)

- preparing an actual (column 23, lines 39-58) response to the communication

However, *Beck et al* doesn't explicitly teach analyzing content of the communication on a computer to identify at least one concept of the communication while *Bennett et al* teaches,

- analyzing (column 11, lines 23-27) content of the communication on a computer (Figs. 1, 10; column 7, lines 9-33) to identify at least one concept (column 33, lines 12-25) of the communication;

- creating a model (column 20, lines 50-53) of the communication using the at least one concept (column 15, lines 6-52)

Bigus teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) response to the communication;

- comparing the predicted response and the actual response to produce feedback (column 6, lines 17-22); and

- using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication (Figs. 2, 5A-B)

Bowman-Amuah teaches,

- the step of comparing the predicted response and the actual response (column 105, lines 6-11) occurs in real time (column 76, lines 42-44)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30), constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52) and improving an organization's responsiveness (*Bowman-Amuah,* column 110, lines 25-30). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bennett et al, Bigus* and *Bowman-Amuah* and for the purpose of improving accuracy/speed/uniformity of response as well as constructing accurate computer system performance models and improving organizational responsiveness.

Claims 66 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bennett et al* in view of *Bigus* and in further view of *Hellerstein et al*.

Regarding claim 66:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)

- analyzing content of the communication on a computer (Figs. 1, 7, 8)

- preparing an actual (column 23, lines 39-58) response to the communication

However, *Beck et al* doesn't explicitly teach analyzing content of the communication on a computer to identify at least one concept of the communication while *Bennett et al* teaches,

- analyzing (column 11, lines 23-27) content of the communication on a computer (Figs. 1, 10; column 7, lines 9-33) to identify at least one concept (column 33, lines 12-25) of the communication;

- creating a model (column 20, lines 50-53) of the communication using the at least one concept (column 15, lines 6-52)

Bigus teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) response to the communication;

- comparing the predicted response and the actual response to produce feedback (column 6, lines 17-22); and

- using the feedback to modify at least one of the set of adaptive models such that the set of adaptive models learns with each received communication (Figs. 2, 5A-B)

Hellerstein et al teaches,

- the step of comparing the predicted response and the actual response occurs (column 15, lines 60-67; column 16, lines 1-6) while further communications are being received (Abstract)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30), constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52) and reducing network traffic (*Hellerstein et al*, column 5, lines 62-67; column 6, lines 1-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bennett et al, Bigus* and *Hellerstein et al* and for the purpose of improving accuracy/speed/uniformity of response as well as constructing accurate computer system performance models and reducing network traffic.

Claims 79-80 are rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bigus* in view of *Hellerstein et al* and in further view of *Johnson et al* "Adaptive model-based neural network control" (13-18 May 1990).

Regarding claim 79:

Beck et al teaches,

receiving a communication (column 7, lines 17-36)

creating a model of the communication (column 10, lines 34-65) on a computer (Figs. 1, 7, 8)

However, *Beck et al* doesn't explicitly teach comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication while *Bigus* teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) action in response to the communication

- comparing the predicted action with an actual action in response to the communication to produce feedback (column 6, lines 17-22)

- updating the set of adaptive models according to the feedback (Figs. 2, 5A-B)

Hellerstein et al teaches,

- if the predicted action substantially matches the actual action, the feedback is positive (column 4, lines 31-47)

Johnson et al teaches,

- an accuracy rating of a model in the set of adaptive models that produced the predicted action is increased (page 1704, section 4.1, paragraph 2; page 1705, left column, paragraphs 1-2)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52), reducing network traffic (*Hellerstein et al*, column 5, lines 62-67; column 6, lines 1-14) and increasing performance (*Johnson et al*, page 1706, section 4.2, paragraph 2). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bigus, Hellerstein et al* and *Johnson et al* for the purpose of constructing accurate computer system performance models as well as reducing network traffic and increasing performance.

Regarding claim 80:

The rejection of claim 80 is the same as that for claims 78 and 79 as recited above since the stated limitations of the claim are set forth in the references.

Claim 81 is rejected under 35 U.S.C. 103(a) as being obvious over *Beck et al* in view of *Bigus* and in further view of *Hellerstein et al*.

Regarding claim 81:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)

- creating a model of the communication (column 10, lines 34-65) on a computer (Figs. 1, 7, 8)

However, *Beck et al* doesn't explicitly teach comparing the model of the communication to a set of adaptive models to produce a predicted action in response to the communication while *Bigus* teaches,

- comparing the model of the communication to a set of adaptive models (column 2, lines 6-29) to produce a predicted (column 9, lines 4-38) action in response to the communication

- comparing the predicted action with an actual action in response to the communication to produce feedback (column 6, lines 17-22)

- updating the set of adaptive models according to the feedback (Figs. 2, 5A-B)

Hellerstein et al teaches,

- if the predicted action substantially differs from the actual action and if a model that substantially matches the actual action exists in the set of adaptive models (column 13, lines 49-54), then the feedback is negative for a model in the set of adaptive models that produced the predicted action and the feedback is positive for the model that substantially matches the actual action (column 4, lines 31-47)

Motivation – The portions of the claimed method would have been a highly desirable feature in this art for constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52) and reducing network traffic (*Hellerstein et al*, column 5, lines 62-67; column 6, lines 1-14). Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made, to modify *Beck et al* as taught by *Bigus* and *Hellerstein et al* for the purpose of constructing accurate computer system performance models as well as reducing network traffic.

Claim 82 is rejected under 35 U.S.C. 103(a) as being unpatentable over *Beck et al.*

Regarding claim 82:

Beck et al teaches,

- receiving a communication (column 7, lines 17-36)

- creating a model of the communication (column 10, lines 34-65) on a computer (Figs. 1, 7, 8)

Beck et al doesn't explicitly teach comparing the model of the communication to a set of adaptive models to determine a category for the communication, comparing the determined category with an actual category for the communication to produce feedback or updating the set of adaptive models according to the feedback. However, Examiner takes Official Notice that comparing communication categories to adaptive models to produce feedback from determined versus actual categories for updating adaptive models is conventional and well-known (*Cohrs et al,* JP409106296A "DEVICE AND METHOD FOR RECOGNIZING VOICE", Canadian Patent 2,180,392 USER SELECTABLE MULTIPLE THRESHOLD CRITERIA FOR VOICE RECOGNITION).

Motivation – It would have been obvious to one of ordinary skill in the art at the time the invention was made to compare the model of the communication to a set of adaptive models to determine a category for the communication, compare the determined category with an actual category for the communication to produce feedback and update the set of adaptive models according to the feedback since Examiner takes

Official Notice that comparing communication categories to adaptive models to produce feedback from determined versus actual categories for updating adaptive models is conventional and well-known to at least *Cohrs et al.*

RESPONSE TO APPLICANTS' APPEAL BRIEF

Applicant(s) argue(s) that the Examiner's rejections of all claims are fully overcome (Brief on Appeal CONCLUSION page 21, paragraph 1) by the arguments questioning the 35 USC 103(a) rejections of claims:

(I) 1-40,61-62, and 73-77 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al* and 5,745,652 to *Bigus* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 3, paragraph 4)

(2) 41-54 and 60 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al* and 5,890,142 to *Tanimura et al* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 3, paragraph 5)

(3) 55 and 59 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al* and 5,745,652 to *Bigus* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 4, paragraph 1)

(4) 56-58 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al* and 5,890,142 to *Tanimura et al* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 4, paragraph 2)

(5) 63-72 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al*, 5,745,652 to *Bigus*, 5,493,677 to *Balogh et al*

and 5,890,142 to *Tanimura et al* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 4, paragraph 3)

(6) 78-82 over U.S. patent numbers 5,867,495 to *Elliott et al*, 5,371,807 to *Register et al*, 5,878,385 to *Bralich et al*, 5,745,652 to *Bigus*, 5,493,677 to *Balogh et al* and 5,890,142 to *Tanimura et al* (Brief on Appeal, Issues on Appeal Under 37 C.F.R. 1 1.192, page 4, paragraph 4).

Claim Rejections - 35 USC § 103

Applicant's questions and arguments (Brief on Appeal, Argument Under 37 C.F.R. 1.192, pages 5-20) have been fully considered, but are moot in view of the above new grounds of rejections necessitating the non-final nature of this Office Action.

The examiner agrees that *Elliott et al* doesn't disclose limitations claimed in the subject application, such as analyzing customer calls received by regional customer contact centers by a modeling engine or equivalent structure to determine an intent (Brief on Appeal, Argument Under 37 C.F.R. 1.192, page 5, last paragraph). However, *Beck et al* column 38, lines 1-9, column 13, lines 5-14; column 31, lines 56-67; column 32, lines 1-5, column 9, lines 25-36; column 31, lines 12-26 and column 32, lines 55-67 are cited for meeting the customer calls analyzed by a regional customer contact center's modeling engine or equivalent structure to determine an intent limitation of the applicant's invention. Examples of other limitations not met by *Beck et al* may be found in *Register et al* column 3, lines 37-52, *Tokuume et al* column 1, lines 55-68, *Parmentier et al* page 1075, left column, last paragraph, *Higgins et al* column 12, lines

22-34, *Liddy et al* Fig. 7; column 9, lines 48-58, *Kohn et al* column 35, lines 36-53, *Bowman-Amuah* column 76, lines 14-18 and 42-44; column 25, lines 1-8, *Bennett et al* column 8, lines 36-50, *Kalogeraki et al* page 295, Fig. 5; page 297, section 6, paragraph 1, *Masand et al* column 40, lines 63-68; column 41, lines 1-9, *Kanno et al* column 4, lines 57-68, *Hellerstein et al* column 16, lines 7-33, *Bigus* column 9, lines 4-38 and *Johnson et al* page 1704, section 4.1, paragraph 2; page 1705, left column, paragraphs 1-2.

Further, the purposes and motivations for modifying *Beck et al* by and in combination with other references include improving accuracy and performance over time (*Register et al*, column 2, lines 10-13), 2), analyzing the input sentence (*Tokuume et al*, column 6, lines 16-20), making the system more robust (*Parmentier et al*, Abstract; page 1076, right column, paragraph 1), increasing the speed of cursive word recognition (*Higgins et al*, column 12, lines 3-7), generating a language-independent conceptual representation of the subject content of a document and query (*Liddy et al*, Abstract), generating control automata that achieve near-optimal performance in spite of certain system nonlinearities, disturbances, uncertainties and changes over time (*Kohn et al*, column 4, line 62-67; column 5, lines 1-3), improving an organization's responsiveness (*Bowman-Amuah*, column 110, lines 25-30), improving accuracy, speed and uniformity of response to speech-based queries (*Bennett et al*, column 5, lines 61-67; column 6, lines 1-30), migrating objects when necessary to maintain uniform load on the processors and increase reliability (*Kalogeraki et al*, page 292, left column, paragraphs 1-2), providing more accurate results (*Masand et al*, column 22, lines 6-13), efficiently

analyzing the meaning of a sentence or phrase (*Kanno et al*, column 1, lines 17-32), reducing network traffic (*Hellerstein et al*, column 5, lines 62-67; column 6, lines 1-14), constructing accurate computer system performance models (*Bigus*, column 2, lines 52-52) and increasing performance (*Johnson et al*, page 1706, section 4.2, paragraph 2).

As set forth above with regards to *Beck et al*, *Register et al*, *Tokuume et al*, *Bigus*, *Higgins et al*, *Kohn et al*, *Liddy et al*, *Bowman-Amuah*, *Hellerstein et al*, *Bennett et al*, *Masand et al*, *Kanno et al*, *Parmentier et al*, *Kalogeraki et al*, and *Johnson et al* the items listed explicitly and inherently teach each element of the applicants' claimed limitations. Applicants have not set forth any distinction or offered any dispute between the claims of the subject application, *Beck et al's* Method and apparatus for supporting diverse interaction paths within a multimedia communication center, *Register et al's* Method and apparatus for text classification, *Tokuume et al's* Natural language processing system, *Bigus'* Adaptive resource allocation using neural networks, *Higgins et al's* Method for improving cursive address recognition in mail pieces using adaptive data base management, *Kohn et al's* Multiple-agent hybrid control architecture for intelligent real-time control of distributed nonlinear processes, *Liddy et al's* Multilingual document retrieval system and method using semantic vector matching, *Bowman-Amuah's* System, method and article of manufacture for configuration management in a development architecture framework, *Hellerstein et al's* Predictive model-based measurement acquisition employing a predictive model operating on a manager system and a managed system, *Bennett et al's* Intelligent query engine for processing voice based queries, *Masand et al's* Classification of data records by comparison of records

to a training database using probability weights, *Kanno et al's* Method and apparatus for analyzing the semantics and syntax of a sentence or a phrase, *Parmentier et al's* Logical structure recognition of scientific bibliographic references, *Kalogeraki et al's* Using multiple feedback loops for object profiling, scheduling and migration in soft real-time distributed object systems and *Johnson et al's* Adaptive model-based neural network control.

Conclusion

The prior art made of record is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the Office should be directed to Meltin Bell whose telephone number is 571-272-3680. This Examiner can normally be reached on Mon - Fri 7:30 am - 4:00 pm.

If attempts to reach this Examiner by telephone are unsuccessful, his supervisor, Anthony Knight, can be reached on 571-272-3687. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 571-272-2100.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MB / M.B.
January 12, 2005

Anthony Knight
Supervisory Patent Examiner
Group 3600